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ABSTRACT

A study was done to discover and generate a theory of instructional design based on procedures currently used in selected adult education agencies. The methodology used was to generate grounded theory in four stages as follows: (1) discovery of a number of categories into which the collected data are coded, (2) integration of the categories and their properties, (3) discovery of the theory, and (4) writing the theory. An initial list of categories generated from a library search was tested in real settings by visiting adult education programs and conducting interviews with administrators and teachers. After dropping and modifying many categories, two categories having theoretical properties emerged: function and process. The characteristics of a function instructional model in operation are requirements for instruction or course needs, high administrative control of instructional style, fixed goals and content, limited instructional strategies, and high institutional control of the learning experience. The process instructional model has the following operational characteristics: statement of an instructional problem, organization of a structure to consider the problem and recommend solutions, production of a goal statement or specific behavioral objectives, design of appropriate instructional alternatives, participatory instructional activities, and evaluation of effect of instruction. (The author makes seven recommendations for operations to be included in any adult education instructional design process.) (EM)

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Presented to

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INTRODUCTION

Since population, location and methods and techniques of instruction in adult education are highly variable, it seems sensible and logical to examine it as being principally concerned with adult learners and their needs for appropriate instruction. The central occupation of a professional adult education must be to design a wide number of learning experiences ranging from traditional classroom teaching to experiments in open learning utilizing all available media technology. Because of the diversity in adult education, a narrow approach to these problems is not very helpful. What is required is a broad look at a number of instructional design and administrative activities to establish the nature of the variables involved and to formulate an explanation of the essential tasks involved which are related to the design of instruction.

Problem Statement

The purpose of this study was to discover and generate a theory of instructional design based on procedures currently used in selected adult education agencies. An instructional design theory should be able to explain the sequence used in the design of instruction and provide a basis for criteria to judge the usefulness of tasks that are included in this activity.

A further purpose of the study was to form hypotheses which can serve to confirm the usefulness of the theory.

Research Method

The methodology used in this study was taken from the sociological sciences and has been named by Glaser and Strauss (1967) in their book, The Discovery of Grounded Theory. To generate grounded theory, the authors use a method they described as the "Constant Comparison Method". Utilizing this method, the theory results from a four-state study. The four stages are not discrete steps but represent major increments of progress which are in interaction.

The beginning stages of comparative analysis consist of discovery of a number of categories into which the collected data are coded. Datum, in this approach, is comprised of a number of different types of information. Data are gathered by the researcher on the scene of the activity being investigated which serves as the source for information. In this early stage of the study, the analyst attempts to discover as many categories as possible or as emerge from the existing data. Data are coded into categories. A category is an essential or important description of a number of concepts. Data or incidents are gathered to give a category a factual base. Categories may be discarded if they lack a foundation in data or new categories may arise as the study progresses.

This activity leads to the second stage of the study, which is the integration of categories and their properties. The use of the constant comparison method of incidents soon begins to make possible the construction of theoretic properties of the category and eventually major categories begin to emerge from the coded data. At this stage the analyst ceases coding data and records a memo on conclusions and theoretical notions as he sees them emerging from the data. In this stage, the categories must not be so firm that they cannot be changed. This step, the solidification of categories, is taken in stage three.

The most important task of the researcher is to find the set of relationships that lies within the data. While he is gathering data, the relationships are fractionated. It is up to the researcher to do his best to compose the various elements that he has coded into categories so that the process he is researching will emerge. It is most important that the evidence be available to support a category as an important part of the theory. A category, to gain support, should be rich with data. Incidents and information should cluster around a category to support its inclusion in the theory or it should be discarded.

At this point, the third stage begins to emerge. This is the stage of actual discovery of the theory and occurs on both the levels of categories and theory. First, major modifications of the categories become fewer and fewer as the theory begins to solidify. At this stage, the categories become saturated as less data comes to light that is new or that would cause significant modification of the properties of a category. Late modifications consist of clarifying the logic, removing non-relevant properties, and simplifying and integrating the outline of the discovered and grounded theory.

The fourth and final stage is writing the theory. The original list of categories is much reduced. Data are now ordered and become a substantial and systematic statement of the matter under study. Abstractions are here formed to explain the underlying complexities of the data. Inconsistencies are brought to view that must be accounted for or explained. The final form of the theory is an integration of the properties under study, rich in conceptual detail, and adequate to develop testable hypotheses.

CONDUCT OF THE STUDY

Literature Search - The first stage of the study consisted of a literature search to establish categories. Generally the search was limited to publications describing approaches to the design of instruction in adult education and elsewhere. The two most comprehensive works in thus respect are Knowles (1970) The Modern Practice of Adult Education and Houle (1972) The Design of Education.

In particular, the purpose of the search was to discover descriptions of design activities which could be used to establish a first set of categories. These ordered categories could then be used as a starting point for theory building as well as a comparision of suggested models with those used in practice.

In general, models of instructional development can be grouped into three major classes:

1) Administrative Model -

   Primary emphasis on the efficient allocation of resources both human and material.

2) Psychological Theory

   Based on theories of how people learn. Emphasis on the individual as learner.

3) Evaluation

   Focus on precision objectives, evaluation of first results.

However, all of the models contain elements of the others such as:

a) a reliance on clear objectives

b) an orderly, logical progression of events

c) evaluation of the final product generated by the system

Of the three forms or models, the Psychological Theory is perhaps best, especially when merged with concerns highlighted in the other two models. This design system is well summarized by Gagne and Briggs (1974) in their book, Principles of Instructional Design:

Steps in Instructional Design
Gagne & Briggs (1974)

1. Analysis and identification of needs
2. Definition of goals and objectives
3. Identification of alternative ways to meet needs
4. Design of systems components
5. Analysis of (a) resources required, (b) resources available, (c) constraints
6. Action to remove or modify constraints
7. Selection or development of instructional materials

8. Design of student assessment procedures
9. Field testing: formative evaluation and teacher training
10. Adjustments, revisions and further evaluation
11. Summative evaluation
12. Operational installation

Perhaps adapting from such a system Knowles suggests for adult education that the steps are (in terms of program development):

1. The establishment of a climate conducive to adult learning
2. The creation of an organizational structure for participative planning
3. The diagnosis of needs for learning
4. The formulation of directions of learning (objectives)
5. The development of a design of activities
6. The operation of the activities
7. The rediagnosis of needs for learning (evaluation)

The Knowles process for learning activity development is:

1. Setting a climate for learning
2. Establishing a structure for mutual planning
3. Diagnosing needs for learning
4. Formulating directions (objectives) for learning
5. Designing a pattern of learning experiences
6. Managing the execution of the learning experiences
7. Evaluating results and rediagnosing

Tough (1971) has suggested that adults have several "learning projects" a year and that they seek out help from the educator for the purposes of planning and furthering their own objectives. This implies that the specific task of the adult educator is to provide assistance for those who have already set objectives of their own. Tough finds that an adult learner, planning his own experience, goes through a series of steps which can be summarized as:

1. Deciding what knowledge or skill to learn and, at the same time, assessing his own deficiencies or weaknesses in his current skill or style.

2. Deciding what resources will best help accomplish his goals:

   a. deciding where to learn
   b. setting aside time, setting deadlines

3. Making decisions about:

   a. pace
   b. estimating progress
   c. considering constraints and removing blocks to progress

4. Obtaining resources and equipment

   a. budgeting funds
   b. locating and preparing an appropriate space for activity

5 Dealing with his own motivation

   a. to help increase the progress of the experience
   b. analyzing lack of interest which might hinder achievement

From an analysis of such design steps, in terms of program development, a list of categories was generated for use in the study. Eventually, from this list, several categories emerged as being relevant to the theory while others did not. Below is a listing of the categories utilized early in the study. Most categories emerged early in the study when some emphasis was placed on generating as many as might be useful throughout the study. While some others emerged late, they were not necessarily more important than those categories thought up earlier. The numbers are a code arbitrarily assigned to identify the category.

The listing is as follows:

20. Finance--programs
21. Finance--teachers
22. Management--management principles

23. Management--power structure
24. Management--models or organization
25. Statements of justification
26. Learning facilities
27. Adult educator characteristics--staff development objectives

50. Needs assessment
51. Demands on services
52. Decision information sources
60 Learner characteristics
53. Curricular decisions--content decision making
54. Learning experience decisions--teacher made
55. Goals and objectives (setting of)
56. Instructional strategies and techniques
57. Instructional settings
58. Evaluation procedures
59. Teacher recuitment
Fuction
Process

70. Finance--participant (tuition)
71. Andragogy
72. Learning experience organization--learner decisions
73. Student benefits (rewards)
74. Societal benefits
75. Definitions of adult education
76. Student recruitment

Definitions were written for each of the categories, which, taken from the literature, were supposed to set some boundaries on the collection of information within the categories.

The discussion of the categories finally generated is in the next section. The list set out here does not reflect the actual findings nor are the categories listed in rank order. Although it was possible to maintain the category title throughout the study, meanings changed as the data were gathered. Finally, this list of categories was reduced to two. Thus, the discussion of the two categories and their meanings is best left to the context of theory discussion in the next section.

Field Work - The second stage of the study (but still the first stage of theory building) consisted of field interviews and visits to adult education programs. The

categories generated during the literature search were here tested against realistic settings using the constant comparison method.

Most good studies expend considerable time and energy in the selection and preparation of appropriate instruments and methods to randomize the population selected for inclusion in the study. These are the techniques which are most familiar to individuals involved in educational research who have been engaged in hypothesis testing. However, these techniques belong to the methodologies of theory verification which are different than the methodologies governing the generation of theory. Glaser and Strauss remark:

> The basic criterion governing the selection of comparison groups for discovering theory is their theoretical relevance for furthering the development of emerging categories. (1967)

Thus, the groups and individuals selected for this study were included because they yielded information relevant to the study. In the interviews, some individuals contributed less than others and some were outstanding in their ability to articulate their functions in the design process.

What is required, in Grounded Theory, is to maximize the opportunitize for observing relevant situations. In finding the various constrasts and similarities between individuals and programs the researcher is forced into generating new categories and explaining the many relationships between the properties under study. Similarities bring out the basic properties of a category and differences aid in developing concepts of generality that are applicable across categories and specific instances.

Within this study, the first group chosen for sampling was one composed of Adult Education administrators. In the early stages of the study, it was necessary to choose administrators from as many different types of institutions as possible, in order to identify those groups who would be willing to cooperate in the study.

Further, the researcher expected some sources of data to be better than others, which did turn out to be true. A total of eleven administrators were interviewed.

After sampling four of the administrators, it became necessary to begin work with the second group chosen for sampling, that of Adult Education teachers. The teachers proved to be very good sources from the point of view that they were able to contribute data at the level where programs and students interact. Moreover, the teachers were able to contribute specific instances concerning their experience in working with instruction after it was designed and passed on to them from the administrative level or was designed and utilized by them as a part of their work with students. Frequently, the teachers were helpful because they held multiple positions in education and could provide comparative examples of their experiences. For instance, one teacher worked as a creative writing teacher in extention and as an instructor at the penitentiary in the areas of science and television repair. Another teacher worked as a senior high school history teacher during the day and taught the same courses, quite differently, to adults at night. Both of these teachers have specific techniques that they vary depending on the group of learners with which they are working. A total of nine teachers were interviewed. Several other teachers were contacted and contributed some information but only those who consented to a minimum of one hour conversation were included as part of the study.

Each interview was held for a minimum of one hour. The interview was structured around the categories shown above, but a formal list of questions did not prove to be helpful either to gather or structure data. Each individual had a "story" of how he or she worked in their organization. It was found that specific questions usually brought out short answers or a question to the researcher to "explain what he meant by that". These questions usually led to

responses such as: "I don't know anything about that" or "I guess I agree (or disagree) with that". Most teachers and administrators appeared to react to a question such as: "Would you explain how you arrived at this instructional strategy?" as one where they were expected to justify their decisions. Instead, the researcher asked each individual to explain "what he or she did" and this prompted a response in greater detail when a point in the story was reached that matched one on the researcher's agenda.

A major disappointment in the study was the lack of quantitative data generated by the agencies which could be included as support for the categories. Although there were some brochures listing course offerings and the like, little was available to provide significant data on how instruction was designed. Some breakdowns of the "warm seat index", (Thomas, 1970) were available, but these were not helpful because they were not very relevant to questions about instructional design.

Generation of the Theory - During the field study, many of the categories generated during the literature search were dropped or greatly modified. When asked to stand the test of relevancy imposed by the constant comparison method, the following categories did not contribute substantially to the final theory.

1. Institutional context
20. Finance -- programs
21. Finance -- teachers
23. Management -- power structure
2. Service production context
3. Clientele involvement contexts
70. Finance -- participant
71. Andragogy
75. Definitions of Adult Education

In this study, Adult Educators did not discuss, or reply extensively, to questions concerning the above categories. Note that these categories appear on the list of all categories used. A comparison with this list will reveal the useful categories. Even then, some categories were more useful than others. Categories coded 50 through 59 proved to be most relevant. All of these categories,

except function and process, emerged early in the study and remained useful thoughout. The following categories attracted the major data used in the final theory.

53. Curricular decisions
54. Learning experience decisions
55. Goals and objectives
56. Instructional strategies and techniques

The final two categories, function and process, emerged late in the study. Two other categories, teacher recruitment and Adult Educator characteristics also emerged late but were not of the same conceptual utility as function and process.

Function and process are quite different kinds of categories than the others used in this study. When applied to the other categories a clear division of the data occurred. Process, which emerged first, when used to recode the data, resulted in the emergence of this category as one with theoretical properties. Since both function and process could be used to explain the procedures and theory of instructional design in Adult Education, it was clear that they were much more relevant as a conceptual and data organizer than other categories. At this stage, during the writing of theory, it was evident that the discussion of theory should focus on process and function.

Results

Despite the emphasis in the literature on the "design of instruction", in actual practice there are few examples of its existence in a pure state. Instructional design is a process, consisting of a series of interdependent steps that lead toward a particular result. In practice (in the agencies studied) there exists a series of operations, or a set of functions, which are used to respond to the needs for instructional methods and techniques. Most programs develop a structure, very similar to those to be found in formal education -- both in the public schools and higher education. These formal structures are applied to

adult education to develop programs and courses. The effect of the utilization of these formal structures is to create a pattern of instruction within a set of institutions which are established and maintained for an indefinite -- but long term -- period of time.

First and foremost, as stated in the literature, the goal of every adult education program is to gather together suitable clientele and involve them in an instructional activity. If no clients are to be found, a program cannot be begun or continued. In some cases, a program cannot begin unless a specific number of students register and pay their tuition. In other cases, where a social need has been established and funded (an example is adult basic education), a program is put together and students attracted to it. In either case, the learner is preeminent to every other concern, success being computed in numbers such that Thomas (1970) felt constrained to name it "the warm seat index".

Under such conditions it would seem highly desirable to organize the enterprise around principles of learner characteristics and the needs of individuals for learning. Indeed, the literature is full of such admonitions. However, there are many differences between the literature and practice.

Often a designer must face a list of administrative demands and constraints which serve to structure the methods and techniques that will be used with the learner. In such a case, the designer becomes cognizant of the fact that instruction may have several goals and expected outcomes, many of which might not match a learner's expectations, goals or needs. However, under such circumstances, this conflict is easily resolved. The designer assumes that if an adult learner is attracted to an instructional activity, he is there to meet his <u>own</u> goals. Thus, the learner has a choice. He can choose to participate or not to participate. As far as the designer is concerned, the task of designing instruction is to make the course or materials as attractive as possible to a significant number of learners.

Although content, sequence and selection of the learning activities are under the control of the designer, it is anticipated that these match concerns and interests of the adult learner. In the opinion of the designer, the learner is usually willing to give up control of the learning activity in exchange for instruction that he (the learner) judges is effective and efficient. The learner has a right to expect that the designer (and later the teacher) knows something about content and the techniques of learning. In such an instance the learner (who is placed in a passive role) is there in the classroom for a reason that is significant to him. It is the responsibility of the designer to know what that reason is or find out, if need be.

There are a considerable number of instructional methods and approaches in adult education and so the pattern outlined above does not always occur. In other cases and instances the principles of instructional design and the andragological approach to adult education are more evident.

In such situations, efforts are made on the part of designers to minimize the gaps between course or content and individual goals. Instructional activities are selected which are appropriate to discovered characteristics of the learner. In short, these instances are marked by responsive design methods and a wide variety of instructional alternatives available to both designer and learner. The differences between these examples are striking, however, especially in terms of the design procedures used. Even then, there are also similarities for there are cases where one or the other patterns blend into each other.

There are many styles and approaches to design and instruction. What is done here, is to develop the characteristic indications of two approaches. For the purpose of this analysis the approaches are named <u>function</u> and <u>process</u>. Function and process represent a reduction from the list of categories utilized in the data gathering procedure. Each of these two categories has generated a

set of properties which appear in the discussion below.

CHARACTERISTICS OF FUNCTION IN ADULT EDUCATION

Functions in Administrations

Functions are simply an organized formal means to conduct instruction, through a grouping process, and are repetitiously applied with little or no modification over a number of variable instructional problems. A function is a method, such as an extension course or a set of course workbooks, or correspondence courses, and techniques, such as a lecture, a discussion group or set of independent study materials. Functions usually have set times and places and specific content to be covered. Control of the learning activities and content are invested in "the teacher". Courses, content and instruction usually resemble their public school or higher education counterparts. One senior administrator explained: "The tendency of the organization is to fit things into what it is convenient for the organization to do. Once you have a pattern you tend to fit people into that".

Administrative organization and procedures constitute the "design" of instruction. All of the administrators involved in strictly functional adult education tended to match their organizational style (i.e., university extension courses, conference center, television home study courses) to whatever educational "needs" were brought to their attention. The search for needs meant to them finding adult populations that could be expected to participate in their style of instruction. They saw this as their job. If the adult learner wanted a different style of instruction or different content he was counseled to go somewhere else. In their positions they saw themselves as doing a "good" job when they ran their operations smoothly and efficiently.

In a typical sequence for "designing" (or more appropriately: "putting a program together") instructional planning begins with a local survey of possible participants. In this context the program is looking for adults who can be

"served" by the instruction. (Some course schedules are derived from survey work, but "popular" courses, either ones that have been a success within the program and bear repeating or ones that have shown a good track record elsewhere, constitute the major portion of the curriculum).

Sometimes, administrators are suspicious of their own survey work. Adults who might answer a question about their interest in a course by indicating that they would attend, fail to materialize when the course is offered. Nevertheless, surveys of one sort or another constitute part of the work of an enterprising administrator. Administrators contact clubs, PTA groups, business organizations and the like for support, participants and new ideas. Panels and advisory committees also contribute information.

Unless courses are attractive to the administration for some reason of social or educational relevance (and the local political situation or outside funding can be some of the causative factors), they will quickly disappear from view. If very few students are on hand for the opening session or if they fail to return for subsequent class sessions, the class will be terminated. Often in such an instance, the teacher who was hired for the course will be dismissed or, if he is lucky, reassigned.

After a proper survey has produced whatever results there are to be found, the next step is to match up a course to "needs". If there are no extant courses to fulfill the need, one or some might have to be created. Actually, the creation of courses is second best. The preference is to match needs (and people) to existing courses. There are several questions that must be answered before a new course is put together. Some of the more important questions that must be answered are:

1. Are there enough potential participants to pay for the expenses of the course?

2. What scheduling and what location are best for the potential adult group?

3. Should the course be for credit or not? (This is a critical question which creates ramifications to be discussed later).

4. If the course is new, who can be found to teach the course?

Scheduling the class and finding an instructor constitute the administrative contribution to "designing" instruction. The instructor organizes the activities and the content to be learned. The type of instructor to be hired, as might be defined by experience and/or academic criteria, could be expected to be determined by the nature of the subject matter and the credit-non-credit question. Where credit is a factor, credentialed personnel are usually required.

When describing their work, adult educators usually begin by detailing the formal hierarchies of their organization. Within these statements are the elements of function, including the administrator's functions, which are applied to whatever has to be done. Administrators explained the procedure, which with some variations, were similar to the typical conversations paraphrased below:

> A while back, someone came to us and suggested that they needed a course in gerontology for health and state agency professionals who work with the aging. Our coordinator went over and talked to them. They had somebody to teach the course and we decided we would put on several afternoon sessions around the state. We have trouble setting the tuition -- it has to pay for the course -- but we try to keep it as low as possible. Well, do you know what happened? We contacted as many people as possible and advertised through the mail but nobody showed up! Now what caused that? Was the tuition too high? Everybody said they <u>needed</u> this program but when the time came they didn't show up.
>
> Well, the first thing we have to decide, the most important thing, is will the course be credit or noncredit. If it's noncredit, that solves a lot of problems, we can just hire a teacher and go. But if it's credit we have to go to the appropriate university department and have the course approved. That means who

> is free among the professors to teach the course because we can't cheat the students -- there have to be the same number of classroom hours as a regular university course. Of course we don't have to meet on Monday - Wednesday - Friday; we can be flexible with that. But pretty much, it's got to look like a unverisity course and be approved by the professionals in that field.

A design system, for the administrative aspects of the function approach, would include the following:

1. Maintain outside contacts
   a. Survey populations
   b. hold and attend advisory group meetings
   c. contact and meet with groups who evidence a need for instruction. Set goals for instruction
2. Develop staff competencies
   a. set curriculum goals
   b. hire competent staff
3. Conduct routine management tasks
   a. schedule courses
   b. obtain and maintain facilities
   c. maintain contact with staff concerning problems, day to day fluctuations that might arise
4. Assess staff performance
   a. judge ability of staff to relate to adult learners
   b. assess influx of students (warm seat index)

Function in Instruction

Function in instruction is the same as in administration, that is, a set body of procedures applied repetitiously with little or no modification over a number of variable problems.

Within the function system, content is held to be a standard to be learned by the student. This is somewhat confusing at first, because the actual content of a course is often selected by teachers to match the abilities of their groups

and must be "appealing" and "interesting". Thus, the content can vary considerably from instance to instance over a single subject. Once committed to the content, however, teachers consider it to be something that must be learned. (A function statement in this context would be: "We have a lot of material to cover in a six-week course".) This is especially true in programs devoted to goals that match those of the public schools, such as Adult High School. In these programs, ranging from English as a foreign language to group sessions in self-awareness, this approach to content prevailed. Teachers justified their techniques in the former instance by saying that adults learned to read English the same way children do and in the later by remarking that research had proven the best way to teach the course. In the end, it is not the arguments (of justification) that matter, but the approaches teachers take toward instruction that mark the function system.

What is most interesting about function is that it holds true over a number of approaches toward instruction. In fact, the category did not begin to take shape until it became apparent that teachers in a program devoted to the use of independent study held attitudes toward instruction almost exactly the same as those involved in ordinary classrooms. Teachers in independent study situations used a pattern of instructional methods that was held invariable in much the same way as conventional teaching. These methods had evolved into functions: routine methods of instruction. "It makes it easier to take care of everybody", said one teacher.

Adult education teachers in all the programs studied held very generalized views about the characteristics of the clients they served. Almost to a man and woman, they were concerned about the self-concepts and feelings the learners brought to the instructional situation. These learner self-concepts tended to temper the students' involvement in instructional activities and so were tagged by the teachers in terms such as: active and confined, social and non-social,

formal and informal and those who need reinforcement (approval, praise) and who don't need it.

Most teachers had one or two dichotomies by which they characterized their students, but seldom more. When pressed, they would launch into a story about their students and how they were getting along "at school". Glaser and Strauss (1967) discovered a "loss rationale" in their study of dying. Adult education teachers have a "benefit rationale" that is common to their stories.

Adult learners are usually well motivated and bring a great deal of energy with them into the learning setting. Function teachers attempt to match up learner goals with their programs style and resources. Students who have difficulty with instruction will tend to drop out and the loss can be dramatic -- now you see them, now you don't.

When students fail to adapt themselves to the instruction, teachers are sometimes unable to explain the reason. In some settings, such as adult high school, counseling might be available to help prepare the learner for entrance into the program and a successful experience while he is there. Teachers believe this to be a "good idea" but actually are little prone to depend on authorities, such as counseling reports or pre-test results, as indicators of student abilities. The teachers tend to establish a personal contact with the learner and so derive their judgements about him from that experience. Nevertheless, when students leave a program, teachers are perplexed. They cite "personal reasons" as the principal explanation of dropping out. Teachers do not fault the program, per se, as the reason for dropping out. The student was unable to cope, he had a problem at home, or with his job. But the program, if only he had held on, "would have done him some good".

Although there is some ambiguity in their statements, function teachers can be quite strong in their belief that adult learners require structured learning

situations. Some teachers remarked that adult students demanded structure and in particular became quite restless when they thought their time was being wasted. More than one teacher remarked that adults use structure as a pacing mechanism to help them find their way through the material. This student need for high structure was seen, by teachers, as an indication of the students' self-concept. The low self-concept students tended to seek out even more structure than their function teachers thought they needed. Over the span of a given unit of material, low self-concept students would select tasks that were easier than the teachers thought they could accomplish and only after this preliminary experience would they work their way into unknown material. One teacher remarked, "If you give them eleven hundred pages, they will go through eleven hundred pages". Parenthetically, however, teachers did not (in one independent study situation included in the study) much care for programmed instruction. P.I., they said, was often written in small steps and did not permit the teachers to maintain control of the learner's progress. One teacher said, "I need to see what they are doing. That's from my elementary background I suppose".

To sum up the matter of structure, teachers commented that students "learned more" in a traditional classroom. Since teachers in adult education do care, very much, about their students, it is doubtful that a structured environment could long exist without the full cooperation and agreement of all concerned. A designer, producing television courses for home study by adults, commented that his efforts to introduce entertainment elements into the programs evoked letters from the students to the effect that they did not want to be "spoon fed". His audience wanted "the essential facts" and wanted to know "what it was they were supposed to learn". In short, this audience wanted a program of instruction that resembled, as closely as possible, the conventional styles of instruction with which they were familiar.

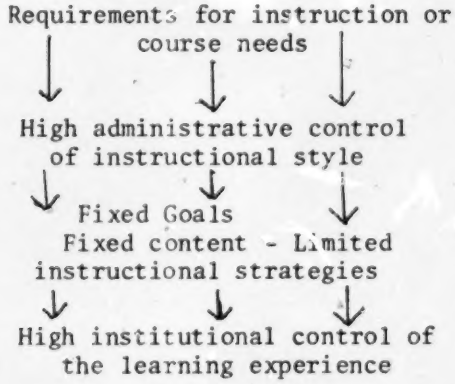
Function in Instructional Design

One administrator, with a good many years of experience, said, "Every form of instruction has its limitations". When designing instruction within the function system (insofar as it can be done given the limitations of the function which are applied) the major questions are: What function will be applied? and, What are the limitations of variability within the function?

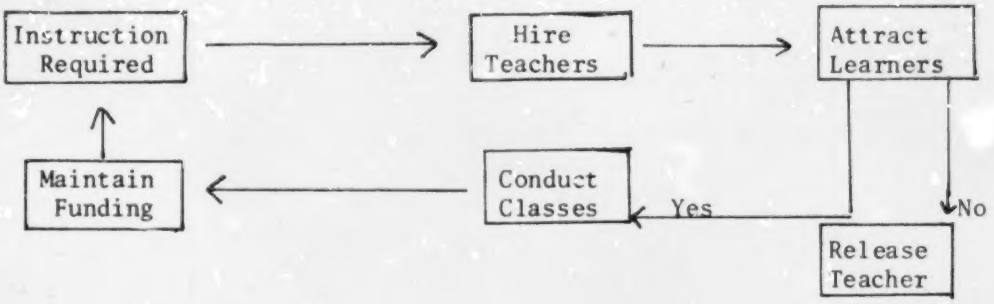
Function is simply an approach, based on several assumptions made about the administration of the learning process, which is used to assemble (the word design does not seem appropriate) instructional programs. Some important assumptions utilized in the function system are:

1. The learner has become involved in the program to learn what is taught there.
2. The way the program is taught is "ideal" for the group of learners.
3. Content selection is a matter best left to the expert who is teaching the course.
   a. The teacher (expert) sets goals for learning.
   b. The teacher sets the standards for what has been learned and how well.

Within the function system, "what is", in terms of instructional approach is what is applied. Programs are not designed. Instead, instructional approaches are applied to educational problems through a decision model that imposes its preferred structure. A simple set of characteristics of this operation might appear as follows:


Requirements for instruction or course needs
High administrative control of instructional style
Fixed Goals
Fixed content - Limited instructional strategies
High institutional control of the learning experience

The application of the instructional approach usually has the format shown below:



From the foregoing discussion, outlining some of the contexts for administration and instruction, it can be seen that the model can be conceptualized in considerably more complex terms, given the variety and mixes of instructional approaches used. However, within the function system, the needs of the learner are deemed to be satisfied when he enrolls and satisfactorily completes a course. Thus, control of the learning activity is not in the hands of the learner.

CHARACTERISTICS OF PROCESS IN ADULT EDUCATION

Process in Administration

Process can be seen as an alternative means to respond to the needs for instruction. The concept of process is more closely allied to that of instructional design in that it attempts to deal with the requirements for instruction from a more generalized point of view. Process is responsive, flexible and creative. Generally, in one way or another, the learner is involved in the decision process that determines content and instructional approach. The process designer has available a number of instructional approaches which can be matched to the needs of learners for instruction.

Process administrators are usually very busy interacting with other people. Since they do not have a set of functions to be applied to instructional problems,

they are involved in designing and re-designing the instructional experiences required by their learners. They are constantly involved in needs data gathering from various sources, and the analysis of that data. Process administrators cultivate a variety of input sources tending to generate a considerable amount of information which must be sifted, weighed and categorized. This procedure takes up a great deal of time and for some administrators constitutes their entire job. In the process system, such data are used for the design of programs and instruction to fit the characteristics of found learner populations.

Process administrators are not simply reactive to the various situations in which they find themselves. They carry with them a definite set of procedures which they attempt to apply to their work. One administrator, working in community development, took a book off his shelf and began quoting from page eighty-eight the specific method of organization he used in his projects (Biddle and Biddle, 1965). While he preferred to organize work efforts in this way, he continued, he never really knew if a project would be carried out exactly like that. "In fact", he said, "most of them weren't". Sometimes, stages were skipped or left incomplete. "What matters", he said, "is that the community accomplishes what it wants to accomplish. We are just there to help".

Process administrators look upon themselves as organizers, facilitators and resource people. "The only reason we are there", said the community developer, "is because we have had experiences in doing things before that the people have not". Other administrators in similar circumstances held much the same view. Another individual reported that he was there simply to see that the resources were used in the most efficient way. "I'm just an advisor", he said.

Process administrators work out usually through group dynamics, the decisions that effect the approaches to instruction that will eventually be used with the learner. Where possible, the learners, or selected representatives

participate in the design procedures and are used to provide direct input to the decision-making regarding such matters as content, teaching and learning methods and techniques. Nevertheless, the administrators do have goals or specific ideas about instruction which they interject into the committee process. One administrator remarked that he had had some difficulty with the population with which he was working at first: "Because they insisted that the training environment be exactly the same as they were used to in their professional preparation," that was, "classroom lectures". "We decided to change this gradually," he explained, "because much of the instruction they (nurses) required simply couldn't take place in that setting". "We had a hard time changing it", he finished, "but we did and now they wouldn't have it any other way". (In this case, instruction is designed, through a committee process, with instructional strategies chosen to match the nature of the learning task.)

Within the process system lies a procedural system which has structure, clearly defined roles and behavioral expectations which can be defined in specific terms (role expectations) and well defined values and norms. The system is operated by the administrators through setting common goals and by using instructional methods which may be varied but are measurable and predictable. The structures, may differ, but individuals, in their various role capacities, are involved in the decisions that affect the determination of the learning experience and environment. Basic to the concept of process is the realization that the variables of instruction, teachers, learners, content, time and environment, among others, are interactive and subject to change. Process administrators are well aware of these factors and utilize procedures which permit others to work within this structure and still achieve their own goals.

Process in Instruction

Whereas in the function system the line of demarcation between administrator and teaching was quite clear, in the process system it is not. Within process, the administrative task carries through the statement of instructional objectives, the selection of appropriate content and instructional strategies. All of these procedures take place within a group context where there is much checking, comparing, approving and related discussion. At times, various individuals might be designated to drop away from the group and work on a specific problem, such as the assembly or writing of content or a description of the strategies to be used, but the final product must attain group approval. Teacher selection is often a final step and (as always) is based on the criteria of specialty expertise.

Teachers within the process system are in a somewhat different position than those in a function system. While it is quite possible for a process approach to produce a very traditional looking course, there is some justification for this since presumably the selection was derived from a set of other alternatives. However, most process administrators and teachers have a bias against traditional forms of instruction such that to "lecture" is to fail the learner. Although process teachers and function teachers are the same in their high regard for their clients, the process teacher is more likely to seek a variety of educational experience alternatives for the learner. Thus, process teachers are less inclined to give "doses" of instruction. As one teacher put it:

> I can't think of a topic that would be good for all of them in one massed group. To do it that way is to give doses.

One administrator characterized the difference in instructional styles as between the "lecture, where all they (the learners) had to do was sit back and listen (or read) and then pass a test;" and "participatory", where they have to select their own path through the learning".

Presumably, although the research did turn up negative examples, the process approach results in a number of different alternatives for learning which are made available to the adult student. Many of the Adult Education teachers interviewed during the course of the study were ambiguous or even contradictory when making statements regarding their techniques of instruction. Some teachers were capable of accepting ambiguity while others were confounded by the idea that they thought they were supposed to be teaching one way (function) but actually found themselves taking on a different role (process). Some teachers, firmly imbedded within a function setting, simply went their own way and used process approaches to learning. These teachers would usually begin an interview using function statements and, when pressed by the interviewer, switch over to explain their techniques in process terms.

Function teachers and statements are usually concerned with the administration of instruction. The teacher sets the goals for learning, establishes the content to be learned and monitors the student through this procedure. Process teachers are those who take an advisory role, help the student define his own goals and then aid the student in seeking out the resources that will help him realize his goals through whatever alternative routes are available.

Most experienced Adult Education teachers recognize that following a function approach is somewhat like swimming upstream. One teacher described an elaborate function methodology, then launched into a series of problems she was having with her students and the method. Finally she shrugged and remarked: "Adult learners <u>do</u> set their own goals! We just set goals with them". Several teachers described their opening class sessions as being a time to discuss and clarify the learners' goals and rationale for undertaking the activity.

> The role we play (in these sessions) is just that of a facilitator. We have them go through exercises--we share . . . but we do a lot of listening and direct questions back to the group.

> I set things up so that I'm in the middle of things. I don't try to take over.
>
> We do not focus on information but on the application of learning.
>
> What you need is a "bag of tricks" -- a number of models that can be called upon.

Much of the discussion about relationships between students and teachers in the section on function in instruction holds true for process teachers. Nearly all Adult Education teachers are aware that there are other influences outside the "school" environment which affect learning performance. Process teachers more easily accept a benefit rationale for experiences outside the classroom, although, it is unfair to say that function teachers are not aware of the "social environment".

There was no evidence that process approaches tend to cluster around one kind of learning or training as opposed to another. Training being given to health professionals in one instances was (and is) designed and provided using a process design approach and a participatory technique of instruction. One teacher, working with group sessions in the area of self-awareness therapy, was applying a highly structured functional technique (as mentioned previously). However, process methods and techniques may often be chosen because they more closely resemble many of the structures of the relationships adults have working in their natural settings.

The instructional approaches of process flow directly from the establishment of this procedure as the means whereby an instructional problem will be solved. Although it is possible to insert some process elements within a function system, the abundance of instructional alternatives necessary for fully participatory instruction generally is best derived from an adherence to a process procedure. Process, like function, is simply an operational procedure. However, process appears to be a much more flexible means for dealing with the variety of variables necessary to design effective instruction.

Process in Instructional Design

Borrowing freely from several models of instructional design, which process procedures closely resemble, administrators and teachers are capable of utilizing a greater variety of resources to formulate their plans for instruction by using a process model. In the early stages of process design, the learner population or their representatives are often included in the planning of instructional activities. In such a situation, the adult educator is capable of assuming and fulfilling an adequate leadership role. In this way, several administrative problems, which might accrue to a function operation, are incorporated into the solution of the educational problem. The learner population is accessible since they have been included in the instructional planning phase and the goals for instruction set relevant to their needs. With some knowledge of the population's requirements for learning, an appropriate program can be designed which will match their interests and characteristics.

The most important assumptions of the process system can be summarized as:

1. The learner will become involved in the program because it was designed along with him to be relevant to his needs.

2. The instructional phase of the program involves the learner in participatory instruction and so is conducted to match his goals using techniques that are considerate of his learning style.

3. Content selection is a matter for joint decision between the learner and the instructor.

    a. The learner sets the goals.
    b. The instructor or teacher advices the learner how best (most easily, most efficiently) to meet those goals.

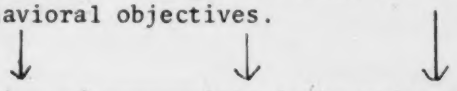
The characteristics of the operation of a process model are:

1. Statement of an instructional problem

    ↓ ↓ ↓

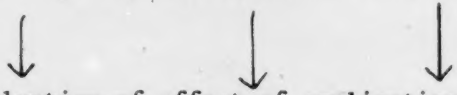
2. Organization of a structure to consider the problem and recommend solutions (herein resides administrative control).

3. Production of a goal statement or specific behavioral objectives.



4. Design of appropriate instructional alternatives.

5. Participatory instructional activities.



6. Evaluation of effect of application of instruction to the stated problem.

Major Propositions of Process and Functions

Function	Process
A formal administrative structure may use groups to help clarify problems or goals as an advisory board.	Choose instructional design process to be followed.
Administrator designs course schedules.	Organize groups or committees to solve instructional problems, select possible alternative learning activities, make decisions about critical content, involve learners, gather needs data.
Courses usually formal instruction with set times and content.	Set up participatory learning situation.
Client interests are discovered (may be derived from group meetings).	Provide variety of approaches to learning.
Hire instructors on a content basis.	Select teachers based on ability to act as resource (content is one important aspect).
Attract clients to courses -- numbers count.	
Assess client knowledge (counseling).	
Fit clients into course.	
Treat clients warmly -- if students leave, close course.	Teacher acts as facilitator, advisor, resource. Helps to solve clients' instructional problems, seeks out learning alternatives.

Function	Process
Teacher sets content goals and standards for learning for the learner.	Clients involved in decisions about content, learning sequence, style and approach.
Match learner goals to content -- student uses content for pacing.	
Administrator assesses staff performance--numbers count.	Instructor and learner evaluate sequence.
Function procedures not necessarily for special or critical content.	Effective solution to instructional problem counts.
	If function created pass along to institution.
	Process procedures not necessarily for special or critical content.

RECOMMENDATIONS

Criteria for the Design of Instruction in Adult Education

Following is a set of criteria statements formulated after conducting the study. These criteria are recommendations for operations which should be included in any instructional design process concerned with programs and materials in Adult Education.

1. The adult learner affected should be a part of the decision-making process (full membership standing) within the design scheme.
2. Insofar as possible, every design process should expect to produce a wide variety of learning task alternatives. The learner should have direct access to these alternatives.
3. Function programs should seek to become proactive to student needs, reviewing their offerings and methods of operation frequently. Process elements could be introduced to enable

the organization to establish and continue to strive toward self-renewal.

4. Both function and process programs should be prepared to engage in staff development efforts that would encourage teachers to seek to broaden their instructional techniques. Instructional methods and techniques that would promote learner independence would be most valuable.

5. In terms of the instructional design process, the following elements should be stressed:

   a. Learners must be permitted flexibility in the manipulation of the content and activities.

   b. Learner styles should be assessed and the results reported to the learner. The results should be used in subsequent selection of learning activities for and with that individual.

   c. Systematic design may provide a procedure for operation, but local requirements may well suggest the need for the design of a design process. Instructional designers should themselves expect to choose alternative formats for designing instruction depending on the resources at hand.

6. Programs should avoid the implementation of innovative procedures unless the program or organization is prepared to change. Without organizational change, the program takes on a public-relations aspect which results in poor service for the learners and eventual problems for the program.

(By way of explanation, the educators involved in process programs in the study were very critical of functional style administrators who began a process approach (through the inclusion of the learner population in their initial organizational efforts to set up courses and programs in a community), but failed to follow through with ongoing programmatic assistance. The process designers

felt that their function colleagues gave the appearance of considering the opinions of individuals who were interested in their programs, but actually failed to do little more than "sell" themselves to a group of potential clients. This indeed is the application of the function system, but the process educators had strong objections to it).

7. Teachers also need to be more sensitive to differences in learning style. Strategies for broadening teacher awareness of learning styles and approaches would help them to institute process approaches, where appropriate, to better select instructional activities for their learners.
8. After goals and content have been selected, and the instructional activity tried, several forms of evaluation must be applied to assess the effectiveness of the effort.

RECOMMENDATIONS FOR FURTHER RESEARCH AND ACTION

Recommendations

1. The group dynamics which exist within the function system (advisory boards) and within the process system (instructional design committee) deserve further study and comparison. What are the inputs and outputs of such units? In particular, do the relationships of the process group result in instruction which reaches a greater portion of the target learner population?
2. What variables are most highly rated by administrators in their judgments of quality educational programs? Number of individuals served? Longevity of the program? Length of time individuals are involved? Number of courses taken and passed? Richness of the funding base?

3. Since Adult Educators feel they must be responsive to community needs, what are the methods they use to contact their target populations and involve them in their programs? What critical information inputs do they use for decision making? How could their methods be improved?
4. What comparisons could be made between teacher and administrator training programs and field practice?
5. What opportunities are available in staff in-service training programs for teachers to develop a broad range of instructional strategies? Are teachers who have no formal training in Adult Education as "good" as teachers who do? Such a study might concentrate on the gaps function and process teachers and administrators see between their training and their present job requirements.
6. Are process programs or groups subject to greater funding and job instability than function programs?
7. Do learners need to be re-trained in their approaches to educational activities? Is it necessary or beneficial to promote greater learner accessibility to educational programs or can it simply be built-in to the design of instruction?
8. Most important, are process and function the only ways instruction is organized in Adult Education? Are there important blends or variations of function and process?
9. Finally, the process and function models require further testing and validation through the gathering of additional data.

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